

Title: Organizational Coordination in Escalating situations in the obstetric setting

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## Background

Research at Lund University has for several years been looking into the problems of unexpected and escalating situations. The concept of escalation is described by Woods and Patterson (2003) as a dynamic process in which an initial irregularity develops into a continually deteriorating situation and starts affecting other areas in an accelerating tempo, with consequences that are difficult to overview and impossible to predict. The research has mainly focused on industries like aviation, shipping and civil crisis management.

The obstetric care represents a complex system in which escalating situations are a frequently recurring problem. This is in part a result of increasingly advanced treatments that allow pregnancies despite co-morbidities and increased patient age. Several problem-areas are described regarding the work in a labor room. Except for the critical medical judgments there is also a need to focus on other questions, like generic team-competencies in managing unexpected and escalating situations.

The aim of our project was to study how the qualitative transition of the organization involved in emergency Cesarean sections can be analyzed and improved?

## Method

The method used was a combination of observatory studies and interviews. A researcher (with a Human Factors and Systems Safety background) visited Vrinnevi hospital in Norrköping, Sweden to study different sub-organizations involved in an emergency cesarean section (CS).

The researcher participated at emergency CS involving the labor ward and the operation ward at Vrinnevi hospital. During the days of the observation the researcher also participated as an observer at elective CS and made interviews with midwives, obstetricians, anesthesiologists, anesthesiology nurses, operation nurses. In the cases of observed emergency CS the researcher followed the patient from the delivery ward to the CS operation. The researcher observed the conversations among the midwives and obstetricians, the phone call between obstetricians and anesthesiologists, the transition of the patient to the operation ward, and the preparation for- and carrying

out of the CS. The interviews focused on narratives, describing ? cases that the respondent had been involved in. However that was not always possible due to the varying level of experience of the respondents. Some interviews therefore focused more generally on the received training and preparation for escalating labor situations.

## Results

The results of the observation-week was a formulation of critical junctures in the transition from normal labor concerning mainly patient and midwives to the emergency state of the system involving obstetrical, anesthetic, operative, and neonatal expertise. The following critical junctures were formulated:

1. **The telephone call between mid-wife and obstetrician.** This is the point in which the labor is identified as non-normal.
2. **The telephone call between obstetrician and anesthesiologist.** This is the call in which the obstetrician announces the emergency CS to the operation ward (could also be a bottom-push if the obstetrician decides that the CS needs to be made immediately).
3. **The communication in the operation room.** There are different communication routines that could be assessed in terms of whether they would ease the communication in the team performing the emergency CS.
4. **The transfer to neonatal care** is another juncture that is seen as critical in terms of how to make sure that the neonatal expertise receive the information that they need for their work with the new-born patient.

The results also suggest that leadership in emergency CS situations is a complex issue that cannot be taken for granted. The respondents did not show a cohesive view of leadership (as would most likely have been the case in aviation or shipping), neither regarding who should be considered the leader, nor regarding the content of such a role. A continuation of the project cannot assume a simple, classic, model of leadership, but must instead define the meaning and implication of leadership in a way that makes it useful to work with for the personnel involved in emergency CS.

Another result of the conducted interviews is that there seems to be a need to find a forum in which the involved personnel categories can meet, exchange experiences and learn about each others' roles, tasks, priorities and goals.

The results of these initial observations will function as input to the continuation of the project.

## Discussion:

One way to construct the problem is as one of organizational coordination in escalating situations. A theoretical base for how to analyze such problems exists within the scholar of *Cognitive Systems Engineering* (CSE) (Hollnagel & Woods, 1983; Hollnagel & Woods, 2005; Klein et al., 2005). Using CSE as a theoretical base the understanding of the specific demands facing the organization involved in escalating delivery situations.

In the continuation of the project the researchers will participate in, and guide, seminars in which all professions mentioned above will be able to take part. The aim of the seminars will be to, based on a risk inventory of the organization involved in emergency CS, suggest measures for improvements of the coordination process. Such measures can be related to communication routines (e.g. in the telephone call in which an obstetrician informs an anesthesiologist that a Cesarean section will be necessary within a specific time frame), team briefing routines, and future training programs.

## References

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